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Amanda L. Husak

Stephen C. Grado

Steven H. Bullard
Stephen F. Austin State University, Arthur Temple College of Forestry and Agriculture, bullardsh@sfasu.edu

Chuck Jepsen

What do landowners think of BMPs?

Perceived Economic Benefits of Mississippi's Forestry Best Management Practices

By Amanda L. Husak, Stephen C. Grado, Steven H. Bullard, and Chuck Jepsen

Amanda L. Husak is visiting research scientist, Department of Forestry, Mississippi State University (MSU); Stephen C. Grado is associate professor of forest resource economics at MSU; Steven H. Bullard is Director, Institute of Furniture Manufacturing and Management, MSU; Chuck Jepsen is resource coordinator, Central Mississippi Resource Conservation and Development Council (RC&D), Natural Resources Conservation Service.

The primary goal of many non-industrial private forest (NIPF) landowners, forestry consultants, and timber industry professionals is to increase revenues from their forestland. Most often, increased revenues are a result of harvesting timber stands from the site. However, the chances of increased revenues can be greatly reduced if the stands are improperly managed or voluntary Best Management Practices (BMPs) guidelines are not followed.

BMPs, simply put, are established guidelines for preventing or reducing non-point source (NPS) pollution from forestry activities and for protecting Mississippi's streams and rivers. When properly applied, BMPs can directly increase forestland revenues through hunting leases resulting from improved wildlife habitat, and through potentially higher stumpage prices from improved site quality and timber productivity.

In the past, BMPs were often perceived as a direct operating cost without direct revenues or benefits to landowners or operators. Numerous studies have now shown that in addition to producing increased revenues, BMPs provide other direct and indirect benefits. These benefits, valuable to a host of forestry-related groups, improve forest habitat. They also not only improve the public's perception of the timber industry, but also increase the overall value of the timber asset. Many of these benefits have easily-quantifiable, readily-apparent social and environmental values, while other benefits like water quality and scenic beauty, though no less valuable, are much harder to quantify and envision. And although the social and environmental values of these benefits are apparent, it is also difficult to place a dollar value on an individual's or community's satisfaction from receiving them. Similarly, costs can be difficult to measure. Nevertheless, relative measures of BMP benefit values, both direct and indirect, can be successfully gleaned from the perceptions of forestry-related groups like (NIPF) landowners, forestry consultants, and timber industry professionals.

The Mississippi Department of Environmental Quality and the Central Mississippi Resource Conservation and Development Council enlisted the Department of Forestry at Mississippi State University to undertake a two-year study to determine potential benefits of BMPs, to devise a ranking system for BMP benefits, to record perceived values of these benefits to key forestry-related groups, and to use the collected information to provide specific examples to demonstrate the economic advantages derived from using BMPs. Key forestry-related groups included landowners who were members of county

Conclusions

BMP benefits extend far beyond the original purpose of nonpoint source pollution control. In fact, by reducing erosion and sedimentation from forestland and maintaining water quality, site productivity and integrity is maintained, leading to improved wildlife habitat, improved access, and improved scenic values.

Results of this study show overall agreement among NIPF landowners, forestry consultants, and forest industry professionals concerning which BMP benefits were most valuable. Erosion control, sediment reduction, and water quality protection consistently ranked highest among all groups. Conversely, improved public opinion, which correlated positively with forestry consultants and forest industry professionals, correlated negatively with NIPF landowners, and affirmed the strong feelings NIPF landowners attribute to property ownership.

Despite some differences in opinion, the perceived values of the BMP benefits selected for this study were very similar among all groups. Each group was aware of BMP effectiveness for resource protection and embraced the potential of BMPs for other, less quantifiable benefits (e.g., water quality and scenic beauty). More importantly, the study also suggested that these forestry-related groups have a largely positive perception of BMPs and their associated benefits. Additionally, the forestry-related groups, through the survey process, were introduced to specific examples of how BMPs provide both direct and indirect economic benefits.

The conservation and sustainability of our forest and water-related resources depend on continued positive relationships among all forestry-related groups. It is the obligation of all involved to practice responsible forest management, and to realize that the practices we engage in today can and will affect our future.

forestry associations or participants in MSU Extension Service workshops and short courses, forestry consultants who were members of the Mississippi Association of Consulting Foresters, and forestry professionals from each of Mississippi's largest timber companies. The researchers identified the study groups based on published forestry literature, professional judgments, and the intentions of the project. They initiated surveys with these groups because they felt the group members were appropriately implementing forestry BMPs. The responses of these survey participants were not representative of the population for each group but are presented as examples for others to emulate.

Methods

Benefit Selection

A list of potential benefits resulting from proper implementation of three specific BMPs (Streamside Management Zones (SMZs), roads/trails, and site preparation/tree planting) was compiled through literature review.

- Benefits selected for SMZs included enhanced wildlife habitat, improved public opinion, increased aesthetic/scenic value, increased stream or riverbank stability, increased chemical filtration, increased habitat diversity, and increased income opportunities. Additional SMZ benefits were increased recreational opportunities, increased shade for aquatic organisms, increased water clarity, increased water quality protection, increased wildfire protection, reduced erosion and sedimentation, reduced flood damage, and reduced water treatment/storage costs.

- Benefits selected for road and trail construction included better drainage, an extended harvest season, improved land access, reduced habitat impacts, reduced initial and long-term erosion, and reduced water runoff.

- Benefits selected for site preparation and tree planting included enhanced wildlife habitat, increased habitat diversity, increased potential income, increased recreational opportunities, increased scenic beauty, increased soil moisture, reduced erosion and sedimentation, reduced runoff, and reduced soil nutrient loss.

Ranking System

A system was devised for ranking each of the selected potential benefits. Respondents were asked to rank each benefit on a scale of 1 to 5 (1 being least beneficial, 2 being less beneficial, 3 being average, 4 being more beneficial, and 5 being most beneficial) according to their perception of the benefit's value.

Survey Distribution

In-person and telephone interviews, and mail surveys of Mississippi NIPF landowners, forestry consultants, and timber industry professionals were conducted in the spring of 2001 to determine the study participants' perceptions of values associated with BMP benefits. A total of 101 surveys were distributed to all groups combined.

Results and Discussion

Response Rates

Response rates from the survey process

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were 63 of 63 (100%) for NIPF landowners, 24 of 30 for forestry consultants (80%), and 7 of 8 (88%) for timber industry professionals. Results are summarized for all groups on benefit rankings, willingness to pay for benefits, and total BMP benefit versus total BMP cost.

Streamside Management Zones
NIPF landowners placed the highest values on BMP benefits that protected soil and water resources. Forestry consultants placed the highest values on benefits with wildlife, scenic, or public enhancements, and forest industry professionals placed the highest values on benefits that enhanced public opinion or maintained stream integrity. As expected, all groups placed the highest values on benefits that protected resources or provided enhancements.

Road and Trail Construction
NIPF landowners, forestry consultants, and forest industry professionals placed the highest values on benefits that controlled erosion and maintained road and habitat integrity. In general, all groups placed the highest values on benefits that maintained the utility of roads and improved site access.

Site Preparation and Tree Planting
NIPF landowners placed the highest values on benefits that maintained soil and water resources or increased revenues. Forestry consultants placed the highest values on benefits that maintained soil and water resources, and forest industry professionals placed the highest values on benefits that maintained soil and water resources or enhanced public opinion. In general, all groups placed the highest values on benefits that conserved soil and water resources (e.g., reduced erosion or increased water quality protection).

Willingness to Pay for Benefits
To better gauge the monetary value groups placed on benefits, they were also asked to indicate what dollar amount they would be willing to pay per acre if they were guaranteed receipt of any of the previously mentioned benefits (Figure 1). Results showed that 26% of NIPF landowners, 17% of forestry consultants, and 25% of forest industry professionals were willing to pay $1 to $6 per acre; 39% of NIPF landowners, 28% of forestry consultants, and 75% of forest industry professionals were willing to pay $7 to $12 per acre. Finally, 23% of NIPF landowners and 28% of forestry consultants were willing to pay $13 to $18 and $19 or more per acre. Interestingly, forest industry professionals were not willing to pay above $7 to $12 per acre, perhaps suggesting that industry views higher costs as prohibitive or simply feels that this $7 to $12 per acre is more than adequate for BMP implementation.

Total Benefits versus Total Costs
Groups were also asked to indicate if they felt BMP total benefits were greater than, equal to, or less than the total costs of BMP application (Figure 2). Results showed that 38% of NIPF landowners, 74% of forestry consultants, and 71% of forest industry professionals felt that BMP benefits were greater than costs. Additionally, 46%, 9%, and 29%, respectively, felt that BMP benefits were equal to costs. Finally, 16% of NIPF landowners and 17% of forestry consultants felt that BMP benefits were less than costs. Interestingly, almost fifty-percent fewer NIPF landowners than forestry consultants or forest industry professionals felt that BMP benefits exceeded costs. This could indicate a need for further or better information regarding BMP costs and benefits and BMPs in general. Additionally, few forestry consultants and NIPF landowners and no forest industry professionals viewed BMP benefits as being less than costs. This could suggest that the full cost of BMP implementation is not being borne by industry, but rather by other groups (e.g., loggers).

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